in Binney's Gould, no action has been taken. A comparison of the figures shows at once that the two forms are distinct. For the New England shell I propose the name of *Margarites Johnsoni*, in honor of Mr. Chas. W. Johnson, author of the valuable "List of New England Mollusca." Specimens have been collected by the Canadian *Neptune* Expedition at Port Burwell, Ungava, Hudson Bay.

Cypraea pacifica was described by J. M. Ostergaard in THE NAUTILUS for January, 1920, p. 92, and well illustrated. I have had the opportunity of comparing a specimen with the varieties of *C. helvola* from the dump at Honolulu, to which it bears a suspicious resemblance, though apparently very distinct, but the bleaching of the specimens from this dredged material plays strange tricks with the Cypraeas. However the name is long preoccupied by Gray, in the Conchological Illustrations p. 15, pl. 7, fig. 39*, 1832. I would suggest that this interesting form, whether variety or good species be named *ostergaardi* after its discoverer.

ON THE STATUS OF CHIORAERA (GOULD)

K. P. KJERSCHOW-AGERSBORG

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BERGH'S description of various species of Melibe (1875, *Melibe capucina, M. rangii;* 1880, *M. vexillifera;* 1884, *M. papillosa;* 1888, 1890, *M. ocellata;* 1902, *M. bucephala;* and 1907, *M. rosa* Rang), emphasizes the following as Melibean characteristics: "*Bulbus pharyngeus cum mandibulis ut in Phylliroides; margo masticatorius mandibulis fortiter dentatus;*" (1875) p. 362. Perhaps the only exception to this may be found in the species collected at the mouth of the Columbia River, in the State of Washington (1904), in which case, the author is not sure of the mandibles. He says: "*Bulbus pharyngeus lingua destitutus.* Die Mundröhre und der Schlundkopf scheinen sich wie sonst bei den Meliben zu

verhalten; die gelblichgrauen Mandibel ganz zerbröckelt, . . .'' I have previously called attention (1919, 1921) to the possibility that this species may be the same as the one described by Gould (1852), from the Puget Sound region. Not all Melibes, however, have the same characteristics as indicated by Bergh; this is shown by Alder and Hancock (1864), and substantiated by Eliot (1902). The generic characteristics as enunciated by Bergh (1875) do not necessarily hold, even though this author thinks that Hancock's (Alder and Hancock, 1864) description is incorrect. Bergh says: '' Es kann kaum bezweifelt werden, dass die von Hancock untersuchte Form, mit der von mir besprochenen congenerisch. Es werden sich daher die bei dem englischen Verf. vorkommenden, von den untenstehenden abweichenden anatomischen Angaben wahrscheinlich als unrichtig erweisen,'' p. 363. '' Besonders wird solche wohl der Fall sein, wo Hancock den Anfang des Verdauungscanals bespricht: ' The buccal organ is provided with neither tongue, jaws nor collar; it is not by any means very distinctly marked, formed as it were by a mere enlargement of the oesophagus, and having little or no increase of muscular power,' '' p. 364.

But Eliot (1902) verifies Hancock's claim when he writes: '' I also found Alder and Hancock's description of the internal anatomy to be correct, particularly as regards the absence of jaws. . . . Mr. Crossland and I have, . . . dissected several specimens of *Melibe fimbriata,* and in all failed to detect any trace of jaws.''

Gould's *Chioraera leonina* (1852) corresponds very closely in the general anatomy to that of *Melibe fimbriata* (Ald. & Hanc., 1864); this is also true as regards the species discovered by Rang (1829) and subsequently described by Bergh (1875), as well as other Melibes described by Bergh (1863, 1871, 1875, 1880, 1884, 1888, 1890, 1902, 1904, and 1908). The only difference is on the point in regard to the mandibles. Some authors, Rang, Gould, Pease, Cooper, and Fewkes, do not touch on this point and in that way, one cannot tell whether the particular specimens with which they dealt actually had such organs. Without considering the mandi-

bles, all the generic characteristics as set forth by the earliest writers on this type of the mollusks agree (Rang, 1829; Gould, 1852; Pease, 1860; Cooper, 1863; Alder and Hancock, 1864; De Filippi, 1867; Tapparone-Canefri, 1876; and Fewkes, 1889; as well as the numerous descriptions of Bergh, 1863-1908). The discovery of the genus *Melibe* by Rang (1829) seems to have been unknown to Gould (1852) who created a new genus (*Chioraera*) for this type. Cooper (1863) and Fewkes (1889) employed the nomenclature of Gould. The generic characteristics as enunciated by the original author for *Melibe* (Rang, 1829) are practically identical with those set forth by Gould twenty-three years later for *Chioraera*. Tryon, Jr., (1883) p. 382, without stating a reason, classifies *Chioraera* as synonym of *Melibe*. Owing to the fact that Gould, and Cooper were ignorant of the actual discovery of the genus *Melibe,* the name *Chioraera* was invented by Gould and subsequently used by Cooper. The name is, in fact, a mythical term that is related in meaning to the former; and neither, of course, is descriptive of the form to which it belongs. Bergh (1904) describing a species from the territory of Gould, Cooper, and Fewkes, does not hesitate to employ the nomenclature of Rang (1829), so similar is this form to the Melibes from other parts of the world. No other author except Bergh gives mandibles as a generic characteristic, and this feature, as stated above, is not observed by Rang (1829), Gould (1852), Pease (1860), Cooper (1863), De Filippi (1867), Tapparone-Canefri (1876), and Fewkes (1889). Although *Melibe* Rang (1829) and *Chioraera* Gould (1852) differ somewhat in shape, they are very similar in most other respects; Rang's description is as follows:

"Anim. pélagien, gélatineux, transparent et limaciforme; la tête distincte et comprenant un voile membraneux, contourné en fore d'entonnoir, garni intérieurement de cirrhes dirigés à l'extérieur, et du milieu duquel s'élève une petite trompe terminée par la bouche; tentacules au nombre de deux, situés à la base du voile, très allongés, coniques, terminés par une petite capsule, de laquelle port un organe conique et rétractile; pied aussi long que l'animal, mais extrêmement

étroit, en forme de sillon; branchies formées de deux séries peu nombreuses de massues oblongues, arrondies a leur sommet, pédiculées à leur base, et recouvertes de petits tubercules; organes de la génération réunis au côté droit antérieur, anus plus en arrière."

And Gould's description of the genus *Chioraera* reads:

"Corpus limaciformis, caput enorme, pedunculatum, semiglobosum; paginâ ventrali discoideâ; ore longitudinali, seriebus binis cirrhorum cincto; tentaculae cephalicæ foliatæ, retractiles; lobi branchiales flabelliformi, serie unicâ utrinque ordina; foramen generativum ab anali remotum, fere dorsali."

In his comment in the English he says:

"This curious and hideous animal seems to belong to the family *Tritoniadae*, with which it agrees in all respects except its curious oral apparatus. (As regards the family rank, *vide* Kjerschow-Agersborg, 1919, 1921). The mouth is inferior, surrounded by a double series of long cirrhi, each of which has an independent motion. Two auriform appendages, on the back of the head, differing in no respect from the branchial expansions except in being destitute of reticulations, seem to be the true tentacles, and are retractile. The generative aperture is at the usual place on the right side, the vent being distant, near the back."

Both *Melibe* Rang, and *Chioraera* Gould, have a series of papillæ (epinotidia) on each side dorso-laterally; a large hood, cowl, or veil; a pair of tentacles, (the so-called rhinophoria) carried on leaf-like stalks, and situated anteriodorsolaterally on the veil; the veil is fringed with at least two rows of cirrhi; and a narrow grooved foot which is blunt in front and pointed behind; the head is distinctly separated from the body, by a neck, and in each case it is very large; the gizzard is lined with a "keratinized" secretion of its epithelium, and this keratinized secretion is the so-called stomach-plates of Alder and Hancock, or Magenzähnen of Bergh, which protects the delicate epithelium and may also help in the mastication of the food; these two types are carnivorous; both are pelagic; and both are distinctly cladohepatic. On *a priori*,

the species of the American west coast which falls within this description must be of the same genus *Melibe*. The effort, therefore, to build further on the nomenclature of Gould, as has been done by Cooper (1863), Fewkes (1889) and more recently by Dr. O'Donoghue (1921) seems to me to be indefensible, and, owing to the fact, that the genus *Melibe* may either possess mandibles (Bergh, 1875) or not, (Alder and Hancock 1864, De Filippi 1867, Tapparone-Conefri 1876, Eliot 1902), the generic description may be modified to read in part:

Bulbus pharyngeus aut cum mandibilis aut sine mandibilis; radula et lingua destitutus.

In point. of fact, Bergh (1908) pp. 94, 95, for the family *Tethymelibidae* Bergh (1892) pp. 1039-1043, after consistently having reported mandibles for each species of Melibe he described during a number of years (1875, 1880, 1884, 1888, 1890, 1892, 1902, 1904) finally admits of the following:

"Forma corporis quasi ut in Æolidiidis. Caput permagnum et cuculliforme; rhinophoria vagina magna retractilia, clavo perfoliato; tentacula nulla. Epinotidia (papillæ dorsales) colosseæ sine bursis cnidogenis. Bulbus pharyngeus rudimentarius, lingua et interdum quoque mandibulis destitutus."

In the family *Tethymelibidae* there are only two genera, *Tethys* and *Melibe*. In the genus *Melibe* he includes eleven species, but he thinks that continued examination will likely reduce this number. Among the species mentioned he includes *Chioraera leonina* (Gould) and now, (1908) emphasizes the following as Melibean characteristics:

"Corpus nonnihil compressum. Branchiæ (propriæ) nullæ. Podarium angustius. Bulbus pharyngeus solum lingua destitutus."

It is thus seen that he admits, in spite of his controversy with Hancock, that: *the tongue and sometimes also the mandibles are entirely lacking.*

None of the authors, (Gould, Cooper and Fewkes) who have not employed the nomenclature of Rang for this type, have described mandibles, and O'Donoghue, (1921) states defini-

tely: "The radula and jaws or any representatives of such structures are entirely absent."

The reasons set forth by Dr. O'Donoghue for disagreeing with Bergh's classification are to my mind not warrantable. This author, in fact, compares it with *Tethys* Linnæus, with which it disagrees in several respects, and he uses this as a reason for placing it in the genus created by Gould. Neither Cooper nor Fewkes made an intensive study of the type, which is evident from their description; a careful study of Gould's *Chioraera,* I think, will bring out sufficient reasons to merge it with *Melibe* as indicated by Tryon, Jr., (1883) and Bergh (1908). And as shown in my work on the morphology of *Melibe* (*s. Chioraera*) *leonina* (Gould), now in press, the general characteristics as well as the structure of *Chioraera leonina* Gould, correspond in many details with those of the Melibes of Rang, Pease, Bergh, *et al.* For this reason I have adopted, and indeed used in previous writings (1919, 1921) the name as indicated by Tryon, Jr., and by Bergh, and also suggested to me by my friend, Professor Trevor Kincaid, viz., *Melibe leonina. Chioraera leonina* (Gould) stands as synonym of this. The correctness of this classification may be verified by comparing the descriptions of Rang, Alder and Hancock, Gould, Pease, Eliot, Bergh, and Kjerschow-Agersborg, *et al.*

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ON THE GENERIC POSITION OF ANCYLUS FLUVIATILIS MULLER

BY BRYANT WALKER

In discussing the availability of *Ancylastrum* Bgt. as a generic receptacle for *Ancylus fluviatilis* Müll., in case *Ancylus* could not be used, (*ante*, p. 5) I stated that the position of Kennard and Woodward in claiming that *Potella lacustris* L. was the correct type of *Ancylus* was " by no means free from doubt ". A subsequent and exhaustive consideration of the argument advanced by them in support of their proposition convinced me that from the data then known their position was untenable. But Mr. Kennard has recently unearthed an ancient paper, apparently entirely overlooked by the bibliographers, which puts an entirely different complexion on the question.

It appears that in 1823-4 there was published anonymously in Vol. XV of " The Quarterly Journal of Science, Literature and the Arts " of the Royal Institution of Great Britain a series of articles on " Lamarck's Genera of Shells ". In 1823 these articles were reprinted from the original type, with only a change of pagination, bound together and published with a new title page and a portrait of Lamarck. This title-page reads as follows:

" Lamarck's / Genera of Shells / Translated from the French / By J. G. Children F. R. S. / with plates / from original drawings / by Miss Anna Children / 1823."

In this paper (p. 231 of the original, p. 94 of the reprint) there is given a sufficient generic diagnosis of *Ancylus* followed by this statement:

" Type. *Ancylus lacustris* (Patella lacustris Linn.)."

A very fair figure of the type species, which is the species commonly called *lacustris*, is given on pl. VII, fig. 121.